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ABSTRACT

Two of the objectives of the field test of Minicourse 18, (teaching reading as decoding) are discussed: (1) the measurement of changes in teacher and related pupil behaviors and (2) comparisons of the effects of four reteach treatments. The main field test of the course was conducted with 63 teachers in two inner city and two suburban sites. The reteach (teaching a lesson a second time) treatment was randomly assigned by school. Videotaped pre and postcourse lessons provided the data for evaluating teacher and related pupil behavior changes, differences in reteach treatments, and comparisons for inner city and suburban teachers. Analysis of the data indicated: (A) grapheme recognition and grapheme/phoneme correspondence increased significantly, (B) grapheme/phoneme correspondence in larger letters increased in all areas except teacher use of similar spelling patterns in presenting words, (C) contextual clues in decoding, teacher response to pupil word and transfer showed significant change in all behaviors. The results indicate Minicourse 18 is effective in changing teacher performance of teaching skills which result in improved pupil learning. (WR)

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TEACHING DECODING SKILLS IN READING

by

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Objectives

This paper is a partial report of the results of the main field test of Minicourse 18, "Teaching Reading as Decoding." The test had four objectives: to measure changes in teacher and related pupil behaviors; to compare the effects of four reteach treatments; to compare entry scores, progress, and exit scores of inner-city and suburban teachers; and to measure the effect of teacher use of the course skills upon pupil achievement in reading. This report will refer to the first two objectives. Data relative to the latter two will not be ready for publication until the final report, to be completed this Fall.

Method

The instructional handbooks and videotapes comprising Minicourse 18 were developed after a review of research findings related to teaching decoding skills. The literature review covered more than 187 studies and other references.* Decoding is defined as the pronouncing portion of the reading act, with only secondary emphasis on meaning.

The main field test of the course was conducted with 63 volunteer teachers in two inner-city and two suburban sites. They were Washington, D.C.; Chicago; Montgomery County, Maryland; and San Lorenzo, California. Most of the teachers (87%) taught in grades one through three, the remainder in grades four through six.

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* This bibliography and further information are available by writing to the author.

The reteach (teaching a lesson a second time) treatment was randomly assigned by school. Originally 15 teachers were assigned to all treatments. However, one school from the reteach population withdrew prior to the commencement of training due to problems of equipment utilization. The reteach population was increased when an additional school asked to participate and the random assignment fell in that category. Other sample differences are the result of attrition.

TABLE 1

RETEACH TREATMENT

Treatment	N
1. Reteach for some Lessons	14
2. No Reteach	22
3. Reteach all Lessons	8
4. Teach to Criterion	12
	56

Data Sources

Videotaped pre- and post-course lessons provided the data for evaluating teacher and related pupil behavior changes, differences in reteach treatments, and comparisons for inner-city and suburban teachers. Two parallel forms of instructions for the lessons were developed. For the pre-course lesson, half the teachers used one form and half used the other. This process was reversed on the post-test.

The videotaped lessons were scored by independent critiquers on tally sheets developed to record use of skills taught in the course.

Data for the effect of the course upon pupil reading achievement is being obtained. Initial testing was done in October, 1971. Final testing will take place in April, 1972. Two reading subtests of the Stanford Achievement Test and a Laboratory-developed test are being used with pupils of teachers who had taken Minicourse 18 and with pupils of control teachers.

Additional data regarding teacher performance will be derived from a third videotaped lesson and a log detailing the use of the skills during the 1971-72 school year. These data will help determine the long-term applications of the course skills.

Participant teachers were also asked to report on a questionnaire their reactions to the course.

The latter three sets of data will be presented in the final report rather than in this paper.

Results

Data regarding teacher pre- and post-course performance were analyzed using the NYBMUL Multivariance computer program to establish univariate F ratios and significance levels. The results of this analysis are shown in the grand means reported in Table 2.

The table is divided into two groups: behaviors where increase was considered desirable (1-22), and behaviors where decrease was considered desirable (23-29).

TABLE 2

CHANGES IN PRE-POST BEHAVIOR FROM THE MAIN FIELD TEST OF MINICOURSE 18
(N = 56)

	Behavior Compared	Pre-tape Mean	S.D.	Post-tape Mean	S.D.	F
	Increase considered desirable					
	1. Match letter	.32	.86	2.79	2.05	69.29**
a	2. Describe letter	.43	.95	1.23	.87	20.97**
	3. Find letter without clues	.16	.71	.89	1.29	12.60**
	4. Tell letter location	.63	2.28	4.16	4.36	35.92**
	5. Say and show word	5.27	6.67	16.77	12.18	42.18**
b	6. Write and say pupil's word	2.55	4.57	5.11	5.74	6.74*
	7. Teach letter variability	1.23	2.92	7.36	6.56	43.34**
	8. Use similar spelling pattern (T)	1.29	.97	1.27	.80	.01
	9. Use similar spelling pattern (P)	.95	.88	1.04	.79	.39
c	10. Use contrasting spelling pattern (T)	1.75	1.31	2.38	1.34	6.36*
	11. Use contrasting spelling pattern (P)	1.45	1.22	1.80	1.33	2.13
	12. Present affixes together	.66	.58	.84	.68	1.88
	13. Discuss affix meaning	.61	.78	1.16	1.30	7.27**
	14. Arrange sentence	1.11	1.42	1.64	1.52	4.97**
d	15. Substitute sentence word	.04	.19	.20	2.45	12.99**
	16. Question word substituted	.02	.13	.54	1.39	7.65**
	17. Teach homograph duality	.23	.69	1.84	2.17	23.26**
e	18. Return to review word	.32	.64	1.02	1.61	8.04**
	19. Compare with target word	.04	.19	.70	1.61	9.17**
	20. Ask how or why	1.11	1.96	3.68	3.50	22.79**
f	21. Word one letter different	8.38	5.49	11.55	9.12	4.65*
	22. Word from previous parts	1.59	1.41	2.86	2.58	10.17**
	Decrease considered desirable					
e	23. Ignore	.84	1.25	.36	.98	4.97*
	24. Move to other pupil	.61	1.07	.55	.99	.07
a	25. Name letter	67.98	42.18	35.95	38.81	52.64**
	26. "Sound says"	8.57	7.25	1.32	1.57	60.53**
b	27. Isolate phoneme (T)	17.89	11.62	1.07	2.83	128.88**
	28. Isolate phoneme (P)	16.05	15.74	.96	2.61	59.24**
	29. Pronounce unnaturally	16.16	14.08	3.25	5.41	55.78**

T = Teacher
P = Pupil

* .05
** .01

a = Grapheme Recognition
b = Grapheme/Phoneme Correspondence
c = Larger Letter Units, G/P Correspondence
d = Contextual Clues
e = Response to Error
f = Transfer

In the first two teaching skill categories, grapheme recognition and grapheme/phoneme correspondence, there was a significant increase in all seven behaviors in the post-course grand means.

The third category, grapheme/phoneme correspondence in larger letter units, showed increase in all behaviors except teacher use of similar spelling patterns in presenting words. However, the increase seen in the other behaviors was statistically significant in only two behaviors. Further analysis of the behaviors for which significance was rejected will be reported later in this paper.

The following three skill categories, contextual clues in decoding, teacher response to pupil word, and transfer showed significant change in all behaviors.

All except one of the behaviors considered negative showed significant decreases, with the majority revealing marked changes. The non-significant change was in the behavior of a teacher moving to another pupil without enabling the first pupil to correct his error.

The five behaviors which did not differ significantly in the pre/post grand means were analyzed further by using the Ariel t-test Program for Correlated Means. (See Table 3.) Significant t's within reteach treatments were found for three behaviors in the All Reteach or Some Reteach treatments.

TABLE 3

RETEACH TREATMENT EFFECTS FOR BEHAVIORS
WHOSE GRAND MEANS LACK SIGNIFICANCE

Behavior	T	Pre-tape Mean	S.D.	Post-tape Mean	S.D.	t
Increase Considered Desirable						
Use similar spelling pattern (T)	All	1.63	.74	2.13	.84	1.87
	Some	.93	1.21	1.14	.86	.48
	TC	1.25	.97	1.00	.60	-.76
	No	1.41	.85	1.18	.66	-.93
Use similar spelling pattern (P)	All	1.13	.99	1.75	1.04	3.42*
	Some	.86	1.03	.86	.77	0.
	TC	.58	.67	.67	.49	.32
	No	1.14	.83	1.09	.68	-.21
Use contrasting spelling pattern (P)	All	1.25	.89	2.25	.89	2.37*
	Some	.86	1.23	2.21	1.63	2.30*
	TC	.58	.67	.67	.49	.32
	No	1.14	.83	1.09	.68	-.21
Present affixes together	All	.88	.35	.75	.46	-1.00
	Some	.29	.47	1.14	.86	2.75*
	TC	.83	.39	.83	.39	0.
	No	.73	.70	.68	.72	-.20
Decrease Considered Desirable						
Move to other pupil	All	0.	0.	1.13	1.55	2.05
	Some	1.07	1.49	.50	1.09	-1.20
	TC	.33	.49	.25	.45	-.43
	No	.68	1.09	.55	.86	-.45

T = Treatment
All = Reteach all Lessons
Some = Reteach Some Lessons
TC = Teach to Criterion
No = No Reteach

* .05

The effect of the reteach treatments was analyzed initially by using the NYBMUL Multivariance computer program to perform an analysis of covariance on the scores by reteach treatment, using the pre-scores as covariates. Significant differences were found in the following five behaviors:

Tell letter location

Use similar spelling pattern (T)

Use similar spelling pattern (P)

Word from previous parts

Name letter (neg.)

A preliminary analysis of the above five behaviors which did differ in covariate analysis showed that, in the first four, greater gains were found for those treatments including some reteaching. The fifth behavior, letter naming (negative), showed a decrease in all four treatments, but the decrease was least in the all reteach treatment.

Significance of the Study

The results reported in this paper indicate that Minicourse 18 is effective in changing teacher performance of teaching skills which research suggests result in improved pupil learning. The application of research to teaching techniques is valuable in a field where suggestions for teaching are most often derived without attempts to utilize findings in any organized way.

The analysis of the reteach treatments is of particular interest to our staff in Teacher Education, as we develop materials and suggest the

amounts of practice needed to achieve stated goals. Changes for behaviors differing significantly only within treatments occurred in conjunction with reteaching the lessons. The implication is that when the value of reteaching is questioned, it would be better for developers to err by including reteaching rather than by excluding it.

Another possible conclusion which may be drawn from this study is that the important behaviors in a course are those which are most likely to have not previously been used by the teacher.